

Notice of Allowability

Application No.

10/633,251

Applicant(s)

WILSON ET AL

Examiner

Courtney Thomas

Art Unit

2882

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address—

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 06/20/05.
2. ☒ The allowed claim(s) is/are 1-6, 8-14 and 16-20.
3. ☒ The drawings filed on 01 August 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 06.20.05 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on Application Number 10/248,153 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

2. Claims 1-6, 8-14 and 16-20 are allowed.

3. The following is an examiner's statement of reasons for allowance:

4. **As per claim 1 and dependent claims 2-6 and 8**, the examiner found no reference in the prior art that disclosed or made obvious a flat panel X-ray tube assembly comprising a) a plurality of target wells formed as at least one line of target wells in a substrate upper surface, each of the plurality of target wells comprising a first angled side surface positioned in an acute angle relative to the substrate upper surface and b) a plurality of first target elements applied to each one of the first angled side surfaces, the first target elements generating X-rays in a direction perpendicular to a plurality of emitter elements in response to electrons received from one of the plurality of emitter elements as recited in independent claim 1.

5. **As per claim 9 and dependent claims 10-14 and 16**, the examiner found no reference in the prior art that disclosed or made obvious a flat panel X-ray tube assembly comprising a) a substrate including a plurality of first side angled surfaces, each of the first angled side surfaces in communication with one of a plurality of electron beams, each of the first angled side surfaces angled relative to the plurality of electron beams such that one of the plurality of electron beams

approaches one of the first angled side surfaces at an acute angle and b) a plurality of first target elements applied to each of the plurality of first angled side surfaces, wherein the plurality of first target elements comprise at least one line of target elements, each of the plurality of target elements positioned parallel with one of a plurality of first angled surfaces, each of the plurality of first target elements generating X-rays in a direction parallel to one of the plurality of electron beams as recited in independent claim 9.

6. **As per claim 17 and dependent claims 18-20**, the examiner found no reference in the prior art that disclosed or made obvious a method of generating a plurality of X-ray beams having a plurality of focal spots comprising the steps of a) impacting a plurality of electron beams into one of a plurality of first target elements, each of the first target elements mounted on a first angled side surface of a substrate, b) striking the first target element with the electron beam at an acute angle and c) releasing X-rays from each of the first target elements in a direction parallel to one of a plurality of electron beams, as recited in independent claim 17.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

9. U.S. Patents 4,837,793; 4,860,328 and 4,872,189 to Frankel et al.

10. U.S. Patent 5,383,232 to Gabbay et al.

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11. U.S. Patent 5,629,970 to Woodruff et al.

12. The aforementioned references disclose an anode substrate having an upper surface comprising a plurality of target wells formed as a line of target wells in the substrate upper surface, each plurality of target wells comprising a first angled side surface positioned in an acute angle relative to the substrate upper surface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Courtney Thomas
Examiner
Art Unit 2882

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DAVID V. BRUCE
PRIMARY EXAMINER